REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-8 are pending in the present application. Claims 1-8 are amended by the present amendment. Support for additions to the claims can be found in the claims as originally filed.[1] Thus, no new matter is added.

In the outstanding Action, Claims 1-5 were rejected under 35 U.S.C. §103(a) as unpatentable over Miya (U.S. Pub No. US 2003/0171118 A1) in view of Cheng et al. (U.S. Pub No. US 2004/0018846 herein referred to as "Cheng"); and Claims 6-8 were rejected under 35 U.S.C. §103(a) as unpatentable over Fujino (U.S. Pub No. US 2003/0174689 A1) in view of Cheng.

Addressing now the rejection of Claims 1-5 under 35 U.S.C. §103(a) as unpatentable over Miya in view of Cheng, this rejection is respectfully traversed.

Amended Claim 1 recites,

> A packet communication method comprising the steps of:
> establishing a single radio layer 2 connection based on a radio layer 2 protocol, between a mobile station and a controller device;
> receiving, at the controller device, a plurality of data packets in which respective qualities of service are set;
> inputting, at the controller device, the plurality of data packets to queues corresponding to the respective qualities of service;
> determining, at the controller device, a timing for taking out each of the plurality of data packets from the queues corresponding to the respective qualities of service, based on the respective qualities of service; and
> multiplexing, at the controller device, each of the plurality of data packets taken from the queues at the determined timing into a radio layer 2 protocol data unit of a fixed length which is transmitted and received on the single radio layer 2 connection.

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[1] See specification, page 13, lines 13-17; page 13, line 23 - page 14, line 21; page 20, line 28 - page 21, line 5; page 21, line 16 - page 22, line 14; Figs. 4, 5, 6 and 12

Claims 2 and 4 recite a corresponding controller device and mobile station respectively.

Miya describes a cellular wireless transmission method where a single base station processes signals received in distributed antennas such that a demodulator can perform maximum ratio combining with respect to every signal after radio reception processing.[2] Miya further describes determining, at the RNC, the transmission timing of downlink data packets from each of a plurality of base stations to which the mobile station is connected, based on a quality of service (QoS) requirement included in the downlink data packet.

Cheng describes a method for controlling RLP (radio link protocol) logical layer operations of a communication station.[3] Cheng describes establishing an RLP connection based on the RLP protocol between a mobile station and RNC. Cheng also describes multiplexing data packets into an RLP frame which is transmitted and received on the RLP connection, with quality of service (QoS) being performed in the OSI Layer 2 (data link layer).[4]

However, Miya fails to describe or suggest multiplexing each of a plurality of data packets in which respective qualities of service are set into the radio layer 2 protocol data unit on the *single* radio layer 2 connection, by determining the timing for taking out each of the plurality of data packets from the queues corresponding to the respective qualities of service, as is recited in amended Claim 1.

In addition, Cheng fails to describe or suggest multiplexing each of a plurality of data packets in which respective qualities of service are set into the radio layer 2 protocol data unit on the *single* radio layer 2 connection, by determining the timing for taking out each of the

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[2] see Miya, Abstract.
[3] see Cheng, Abstract.
[4] see Cheng, Fig. 2.

plurality of data packets from the queues corresponding to the respective qualities of service, as is recited in amended Claim 1.

In contrast to Applicant's claimed invention, the combination of Miya and Cheng describes transmitting each of the plurality of data packets in which respective qualities of service are set through multiple radio layer 2 *connections* corresponding to respective qualities of service, not through a *single* radio layer 2 connection recited in amended Claim 1.[5]

Thus, although Cheng describes multiplexing in a layer 2 connection, Cheng does not describe or suggest the problem of achieving QoS data packet control by *reducing the number of radio layer 2 connections* established between the radio controller device and the mobile station. In addition, Miya does not describes this feature, at least because Miya does not describe or suggest multiplexing packets in a radio layer 2 connection.

Therefore, for at least the above noted reasons, Applicants respectfully submit that the combination of Cheng and Miya does not describe or suggest the feature of multiplexing each of a plurality of data packets in which respective qualities of service are set into the radio layer 2 protocol data unit on the *single* radio layer 2 connection, by determining the timing for taking out each of the plurality of data packets from the queues corresponding to the respective qualities of service.

Accordingly, Applicants respectfully submit that Claim 1, and similarly Claim 2 and 4, patentably distinguish over Miya and Cheng.

Addressing now the rejection of Claims 6-8 under 35 U.S.C. §103(a) as unpatentable over Fujino in view of Cheng, that rejection is respectfully traversed.

Amended Claim 6 recites,

> A packet communication method comprising the steps of:

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[5] see Cheng, Fig. 2.

establishing, at a mobile station, a single radio layer 2 connection based on a radio layer 2 protocol;

establishing a plurality of tunneling connections for respective qualities of service, between a first controller device and a second controller device;

receiving, at the first controller device, a plurality of data packets in which the respective qualities of service are set and which are transmitted from the mobile station, through the single radio layer 2 connection or a single tunneling connection;

determining, at the first controller device, a tunneling connection associated with a terminal address of the mobile station and a quality of service which are included in each of the received plurality of data packets, among a plurality of tunneling connections for respective qualities of service; and

relaying, at the first controller device, each of the plurality of data packets to the second controller device through the determined tunneling connection.

Claim 8 recites a corresponding controller device.

Fujino describes a general packet radio service (GPRS) system for packet transmission between mobile stations in the system.[6] Fujino further describes establishing a GTP connection between the RNC and the SGSN, and relaying at the RNC a data packet transmitted from the mobile station to the SGSN through the GTP connection. Fujino additionally describes placement of a new node in the network such that when a mobile station calls a nearby mobile station, the transmission is not routed across the entire network.

However, Fujino does not describe or suggest receiving, at the first controller device, a plurality of data packets in which the respective qualities of service are set and which are transmitted from the mobile station, through the single radio layer 2 connection or a single tunneling connection, and determining a tunneling connection associated with a terminal address of the mobile station and a quality of service which are included in each of the received plurality of data packets, among a plurality of tunneling connections for respective qualities of service, as is recited in Claim 6.

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[6] see Fujino, Abstract.

In addition, Cheng does not describe or suggest receiving, at the first controller device, a plurality of data packets in which the respective qualities of service are set and which are transmitted from the mobile station, through the single radio layer 2 connection or a single tunneling connection, and determining a tunneling connection associated with a terminal address of the mobile station and a quality of service which are included in each of the received plurality of data packets, among the plurality of tunneling connection for respective qualities of service, as is recited in Claim 6.
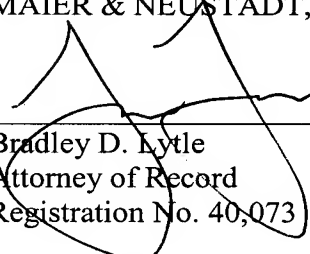
In contrast to Applicant's claimed invention, the combination of Fujino and Cheng describes that multiple radio layer 2 *connections* are established for the respective qualities of service. In fact, neither Fujino nor Cheng attempts to reduce the number of radio layer 2 connections established between a radio controller device and a mobile station.

Therefore, for at least the above noted reasons, Applicants respectfully submit that the combination of Cheng and Fujino does not describe or suggest the feature of receiving, at the first controller device, a plurality of data packets in which the respective qualities of service are set and which are transmitted from the mobile station, through the single radio layer 2 connection or a single tunneling connection, and determining a tunneling connection associated with a terminal address of the mobile station and a quality of service which are included in each of the received plurality of data packets, among a plurality of tunneling connections for respective qualities of service.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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